

WHAT IS CLAIMED IS:

1. A system for supplying power over a home phone line network, comprising:

a power source coupled to the home phone line network, wherein said power source comprises:

an AC signal generator; and

a band pass filter;

wherein said AC signal generator generates an AC signal with a fundamental frequency spectrally centered between 20 kHz and 200 kHz, and wherein said band pass filter removes undesired harmonics from said AC signal to generate a filtered AC signal for transmission on the home phone line network for powering one or more devices on the home phone line network.

2. The system of claim 1, wherein said power source is coupled to an HFC/cable network and wherein said power source is powered by a signal received from said HFC/cable network.

3. The system of claim 1, wherein said power source is coupled to a battery and wherein said power source is powered by said battery.

4. The system of claim 1, wherein said power source is coupled to a residential AC utility power supply and wherein said power source is powered by said residential AC utility power supply.

5. The system of claim 1, wherein said AC signal generator comprises a resonant mode power supply.

6. The system of claim 1, wherein said AC signal generator comprises:

an oscillator; and  
a linear amplifier;  
wherein said oscillator generates a sinusoidal AC signal, and wherein said linear amplifier amplifies said sinusoidal AC signal to generate said AC signal.

7. The system of claim 1, wherein said AC signal generator comprises a class D amplifier.

8. The system of claim 1, wherein said AC signal is sinusoidal.

9. The system of claim 1, wherein said AC signal has a voltage of less than 30 Vrms.

10. A system for supplying power over a home phone line network in a manner that is interoperable with other voice and data services operating on the same home phone line network, comprising:

(a) a power supply coupled to the home phone line network, wherein said power supply comprises:

an AC signal generator; and  
a first band pass filter; and

(b) a telephony device coupled to the home phone line network, wherein said telephony device comprises:

a second band pass filter; and  
an AC/DC converter;

wherein said AC signal generator generates an AC signal with a fundamental frequency spectrally centered between 20 kHz and 200 kHz, wherein said first band pass filter removes undesired harmonics from said AC signal to generate a filtered AC signal for transmission on the home phone line network, wherein said second band pass filter receives said filtered AC signal from the home phone line network and passes it to said AC/DC converter, wherein said AC/DC

converter converts said filtered AC signal into a DC signal for powering said telephony device, and wherein said second band pass filter prevents the introduction of undesired harmonics onto the home phone line network from said AC/DC converter.

11. The system of claim 10, wherein said telephony device is a telephone adapter.

12. The system of claim 10, wherein said telephony device is a VoIP telephone.

13. The system of claim 10, wherein said power supply is coupled to an HFC/cable network and wherein said power source is powered by a signal received from said HFC/cable network.

14. The system of claim 10, wherein said power supply is coupled to a battery and wherein said power source is powered by said battery.

15. The system of claim 10, wherein said power supply is coupled to a residential AC utility power supply and wherein said power source is powered by said residential AC utility power supply.

16. The system of claim 10, wherein said AC signal generator comprises a resonant mode power supply.

17. The system of claim 10, wherein said AC signal is sinusoidal.

18. The system of claim 10, wherein said AC signal has a voltage of less than 30 Vrms.

19. A system for supplying power over a home phone line network in a manner that is interoperable with other voice and data services operating over the same home phone line network, comprising:

(a) a power supply coupled to the home phone line network, wherein said power supply comprises:

an AC signal generator; and

a first band pass filter; and

(b) a plurality of electronic devices coupled to the home phone line network, wherein each of said plurality of electronic devices comprises:

a second band pass filter; and

an AC/DC converter;

wherein said AC signal generator generates an AC signal with a fundamental frequency spectrally centered between 20 kHz and 200 kHz, wherein said first band pass filter removes undesired harmonics from said AC signal to generate a filtered AC signal for transmission on the home phone line network, wherein each of said second band pass filters receives said filtered AC signal from the home phone line network and passes said filtered AC signal to a corresponding AC/DC converter, wherein each of said corresponding AC/DC converters converts said filtered AC signal into a DC signal for powering each of said plurality of electronic devices, and wherein each of said second band pass filters prevents the introduction of undesired harmonics onto the home phone line network from said corresponding AC/DC converter.

20. A residential gateway for providing power over a home phone line network, comprising:

a home phone line network interface;

a telephone interface; and

a power supply;

wherein each of said home phone line network interface, said telephone interface and said power supply are coupled to the home phone line network,

wherein said home phone line interface transmits analog data signals over the home phone line network, wherein said telephone interface transmits analog voice signals over the home phone line network, and wherein said power supply generates an AC power signal over the home phone line network that does not interfere with said analog voice and data signals.

21. The residential gateway of claim 20, wherein said telephone interface comprises a low pass filter to attenuate said AC power signal

22. The residential gateway of claim 20, wherein said AC power signal has a fundamental frequency spectrally centered between 20 kHz and 200 kHz.

23. A method for supplying power over a home phone line network, comprising:

generating an AC signal with a fundamental frequency spectrally centered between 20 kHz and 200 kHz;

band pass filtering said AC signal to remove undesired harmonics to generate a filtered AC signal; and

providing said filtered AC signal to the home phone line network.

24. The method of claim 23, further comprising:

receiving a power signal from an HFC/cable network; and

using said power signal to generate said AC signal.

25. A method for supplying power over a home phone line network, comprising:

generating an AC signal with a fundamental frequency spectrally centered between 20 kHz and 200 kHz;

band pass filtering said AC signal to remove undesired harmonics, thereby generating a first filtered AC signal;

providing said filtered AC signal over the home phone line network;  
receiving said filtered AC signal from the home phone line network;  
band pass filtering said filtered AC signal to prevent undesired harmonics  
from being passed to the home phone line network; and  
converting said filtered AC signal to a DC signal for powering an  
application.